

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A messaging system, comprising:
 - a client device having stored therein a client application adapted to be executed by said client device;
 - a server having stored therein a server application adapted to be executed by said server;
 - a plurality of wireless networks adapted to communicate messages between said client device and said server and to support one or more wireless network protocols;
 - a protocol gateway to encapsulate a fundamental network protocol underlining each of said one or more wireless network protocols; and
 - a communicator to communicate a message between said client application and said server application over a selected wireless network protocol through said protocol gateway independent of said selected wireless network protocol;

wherein said protocol gateway is clustered with at least one other protocol gateway for at least one of redundancy, scalability, and load balancing.

2. (previously presented) The messaging system according to claim 1, further comprising:
 - at least one message router for routing said message between said protocol gateway and said server.

3. (previously presented) The messaging system according to claim 2, wherein:
 - said message router further comprises means for authenticating an origin of said message.

4. (previously presented) The messaging system according to claim 3, wherein:

said authenticating means authenticates said origin before said message is routed by said message router.

5. (previously presented) The messaging system according to claim 3, further comprising:

a database accessible by said message router and adapted to store information relating to routing and authentication of said message.

6. (previously presented) The messaging system according to claim 1, further comprising:

an HTTP proxy server adapted to receive a plurality of HTTP requests from said client device, send each said request over an Internet to said server, and transmit a response corresponding thereto from said server to said client device.

7. (previously presented) The messaging system according to claim 6, wherein:

said HTTP proxy server is adapted to support one or more HTTP protocols.

8. (original) The messaging system according to claim 6, wherein said HTTP proxy server comprises:

means for creating a TCP/IP socket connection; and
means for managing said TCP/IP socket connection.

9. (previously presented) The messaging system according to claim 1, further comprising:

an SNMP manager.

10. (previously presented) The messaging system according to claim 1, further comprising:

means for defining a maximum segment size;

means for determining if said message exceeds said maximum segment size; and

means for segmenting said message into a plurality of message segments, none of said plurality of message segments exceeds said maximum segment size.

11. (previously presented) The messaging system according to claim 1, further comprising:

means for supporting a message retry in each of said wireless network protocols.

12. (previously presented) The messaging system according to claim 1, further comprising:

means for supporting a message ACK/NACK service in each of said wireless network protocols.

13. (previously presented) A method of communicating a message between a client device having stored therein a client application adapted to be executed by said client device and a server having stored therein a server application adapted to be executed by said server over a plurality of wireless networks, each of said plurality of wireless networks is adapted to support one or more wireless network protocols, said method comprising:

providing a protocol gateway to encapsulate a fundamental network protocol underlining each of said one or more wireless network protocols; and

communicating said message between said client application and said server application over a selected wireless network protocol through said protocol gateway independent of said selected wireless network protocol; and

clustering said protocol gateway with at least one other protocol gateway for at least one of redundancy, scalability, and load balancing.

14. (previously presented) The method according to claim 13, further comprising:

providing at least one message router for routing said message between said protocol gateway and said server.

15. (previously presented) The method according to claim 14, further comprising:

authenticating an origin of said message.

16. (previously presented) The method according to claim 15, wherein:

said authenticating step is performed before said message is routed by said message router.

17. (previously presented) The method according to claim 15, further comprising:

providing a database accessible by said message router; and

storing in said database information relating to routing and authentication of said message.

18. (previously presented) The method according to claim 13, further comprising:

providing an HTTP proxy server adapted to receive a plurality of HTTP requests from said client device;

sending each said HTTP request received by said HTTP proxy server over an Internet to said server; and

transmitting a response corresponding to each said request from said server through said HTTP proxy server to said client device.

19. (previously presented) The method according to claim 18, further comprising:

adapting said HTTP proxy server to support one or more HTTP protocols.

20. (previously presented) The method according to claim 18, further comprising:

creating a TCP/IP socket connection with said HTTP proxy server; and

managing said TCP/IP socket connection with said HTTP proxy server.

21. (previously presented) The method according to claim 13, further comprising:

defining a maximum segment size;

determining if said message exceeds said maximum segment size;

and

segmenting said message into a plurality of message segments not exceeding said maximum segment size.

22. (previously presented) The method according to claim 13, further comprising:

supporting a message retry in each of said wireless network protocols.

23. (previously presented) The method according to claim 13, further comprising:

supporting a message ACK/NACK service in each of said wireless network protocols.

24. (previously presented) In a client-server environment including a client device having stored therein a client application adapted to be executed by said client device, a server having stored therein a server application adapted to be executed by said server, and a plurality of wireless networks adapted to communicate messages between said client device and said server and supporting one or more wireless network protocols, a computer-readable medium comprising:

a first code segment defining a fundamental network protocol underlining each of said one or more wireless network protocols;

a second code segment encapsulating said fundamental network protocol within a protocol gateway;

a third code segment for communicating a message between the client application and said server application over a selected wireless network protocol through said protocol gateway independent of said selected wireless network protocol; and

a fourth code segment for clustering said protocol gateway with at least one other protocol gateway for at least one of redundancy, scalability, and load balancing.

25. (previously presented) The computer-readable medium according to claim 24, further comprising:

a fourth code segment for routing said message between said protocol gateway and said server.

26. (previously presented) The computer-readable medium according to claim 25, further comprising:

a fifth code segment for authenticating an origin of said message.

27. (previously presented) The computer-readable medium according to claim 26, wherein:

said fifth code segment is adapted to authenticate said origin before said message is routed by said fourth code segment.

28. (previously presented) The computer-readable medium according to claim 26, further comprising:

a sixth code segment for defining a database accessible by an execution of said fourth code segment and adapted to store information relating to routing and authentication of said message.

29. (previously presented) The computer-readable medium according to claim 28, further comprising:

a seventh code segment for supporting one or more HTTP protocols.

30. (original) The computer-readable medium according to claim 29, further comprising:

an eighth code segment for creating a TCP/IP socket connection; and

a ninth code segment for managing said TCP/IP socket connection.

31. (previously presented) The computer-readable medium according to claim 30, further comprising:

a tenth code segment for defining a maximum segment size;

an eleventh code segment for determining if said message exceeds said maximum segment size; and

a twelfth code segment for segmenting said message into a plurality of message segments not exceeding said maximum segment size.

32. (previously presented) A method of deploying content from one of a plurality of servers through a message router and over a wireless network to a client application running on one or more of a plurality of client devices, comprising:

creating an inbound message including a message key at said client device;

sending said inbound message from said client device;

accepting said inbound message at said message router;

forwarding said inbound message to a selected one of said plurality of servers based on said message key.

33. (previously presented) The method according to claim 32, further comprising:

generating a responsive message by said selected one of said plurality of servers;

sending said responsive message from said selected one of said plurality of servers to said message router;

providing a plurality of protocol gateways based on a communication type;

selecting one of the plurality of protocol gateways by said message router; and

forwarding said responsive message to said selected one of said plurality of protocol gateways;

formatting said responsive message for a selected one of said plurality of client devices; and

forwarding said formatted responsive message to said client application running on said selected one of said plurality of client devices.

34. (previously presented) The method according to claim 32, further comprising:

forwarding from said server to said client application running on said selected one of said plurality of client devices an acknowledgement that said inbound message was received by said server.

35. (previously presented) The method according to claim 32, further comprising:

forwarding from said server to said client application running on said selected one of said plurality of client devices a negative acknowledgement indicating that said inbound message was received by said server and no server was available to process said inbound message.

36. (previously presented) In a communications system including a server adapted to run a server application, a plurality of message routers coupled to said server, a plurality of protocol gateways coupled to each of said plurality of message routers, and a wireless network adapted to couple said sever through one or more of said plurality of message routers and one or more of said plurality of protocol gateways to a plurality of client devices, each of said plurality of client devices adapted to run a client application, a method for disseminating content to said client applications, comprising:

receiving a request-for-content message at the server from a selected one of said plurality of client devices sending a responsive message from said server to one of said plurality of message routers;

selecting one of said plurality of protocol gateways based on a communication type by said one of said plurality of message routers receiving said responsive message;

forwarding said responsive message to said selected protocol gateway;

formatting said responsive message for said selected one of said plurality of client devices;

forwarding said formatted responsive message to said client application running on said selected one of said plurality of client devices; and

clustering said plurality of protocol gateways for at least one of redundancy, scalability, and load balancing.

37. (previously presented) A method of authenticating a request for service from a client application running on a client device coupled through a message router to a server, comprising:

sending a message to said message router by said client application running on said client device;

falling said message router's authentication;

sending a negative acknowledgement with an error code to said client application running on said client device;

composing a response including a user ID, a password, and a requested service type by said client application;

forwarding said composed response to said message router;

authenticating said user ID and user rights by said message router;

updating a table with said authentication;

sending an authentication response and a security token to said client application running on said client device;

resending said message with said security token to said message router from said client device;

verifying an address of said client device; and

forwarding said resent message to said server based on a message key.

38. (previously presented) A method of authenticating a request for service from a client application running on a client device coupled through a message router to a server, comprising:

 sending a message to said message router from said client application;

 failing said message router's authentication;

 sending a negative acknowledgement to said client application running on said client device with an error code;

 composing a response comprising a user ID, a password, and a requested service type by said client application;

 forwarding said composed response to said message router;

 further failing said message router's authentication; and

 sending a negative authentication response to said client application running on said client device indicating authentication failure.

39. (previously presented) In a communications system including a server which is adapted to run a server application, a plurality of message routers each of which is coupled to the said server, a plurality of protocol gateways coupled to each one of the said plurality of message routers, and a wireless network adapted to couple said server through one or more of said plurality of message routers and one or more of said plurality of protocol gateways to a plurality of client devices adapted to run a client application, a method of disseminating an unsolicited alert to a selected client application, comprising:

generating an unsolicited alert message by said server application;

sending said unsolicited alert message to one or more of said plurality of message routers from said server;

retrieving a station ID based on a customer ID uniquely associated with a selected client device at said one or more of said plurality of message routers;

determining a communications type based on said station ID;

selecting one or more of said plurality of protocol gateways based on said determined communication type; and

forwarding said unsolicited alert message to said selected one or more of said plurality of protocol gateways;

formatting said unsolicited alert message for said selected client device by said selected one or more of said plurality of protocol gateways;

forwarding said formatted unsolicited alert message to said client application running on said selected client device; and

clustering said protocol gateway with at least one other protocol gateway for at least one of redundancy, scalability, and load balancing.